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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/944,118	09/04/2001	Takaharu Hutamura	11-058	1726
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23400	7590	04/06/2004		
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RESTON, VA 20190

EXAMINER
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NGUYEN, DANNY

ART UNIT	PAPER NUMBER
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2836

DATE MAILED: 04/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

<b>Application No.</b> 09/944,118	<b>Applicant(s)</b> HUTAMURA ET AL.	
<b>Examiner</b> Danny Nguyen	<b>Art Unit</b> 2836	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1)  Responsive to communication(s) filed on 03 February 2004.
- 2a)  This action is **FINAL**.
- 2b)  This action is non-final.
- 3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4)  Claim(s) 1-26 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5)  Claim(s) \_\_\_\_\_ is/are allowed.
- 6)  Claim(s) 1-26 is/are rejected.
- 7)  Claim(s) \_\_\_\_\_ is/are objected to.
- 8)  Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9)  The specification is objected to by the Examiner.
- 10)  The drawing(s) filed on \_\_\_\_\_ is/are: a)  accepted or b)  objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11)  The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a)  All b)  Some \* c)  None of:  
1.  Certified copies of the priority documents have been received.  
2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1)  Notice of References Cited (PTO-892)
- 2)  Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3)  Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4)  Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5)  Notice of Informal Patent Application (PTO-152)
- 6)  Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1- 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eto et al (USPN 6,201,378) in view of the admitted prior art (APA).

Regarding to claims 1, 6, 11, 16-19, 23-26, Eto et al disclose a drive circuit (such as shown in fig. 12) comprises a high-side switching circuit (24a and 50a) connected between power supply line (Vcc); a low-side switching circuit (24b and 50b) connected in series with the high-side switching circuit through an output terminal (Vpr); a voltage detector (comprising resistors 6a-8a) detecting a voltage appearing at the output terminal (Vpr), wherein the low-side switching circuit is controlled to be turned off when the voltage detected by the voltage detector is lower than the predetermined value of the switching element (see col. 24, lines 28-52), and wherein the high-side switching circuit is turned off when the voltage detected by the voltage detector is higher than a predetermined threshold (see col. 24 and 25, lines 53-11). Eto et al do not disclose the output (Vpr) connected to a switching element. APA discloses a switching element (4 shown prior art fig. 10). It would have been obvious to one of ordinary skill in the art at

the time the invention was made to have modified the circuit of Eto et al with a switching element as taught APA in order to improve the switching function.

Regarding to claims 5, 10, 15, Eto et al discloses the voltage detector is implemented by a voltage divider (resistors 6a-8a).

Regarding to claims 2, 3, 12, Eto et al disclose the low side switching circuit includes an output transistor (24b), a pre-driver (57 and 55) a comparing circuit (56 and 57) comparing the output voltage ( $V_{pr}$ ) detected by the voltage detector (voltage divider 6a-8a) with the off-decision voltage ( $V_{ref1}$ ), a logic circuit (50b) controlling an operation of the pre-driver on a result of comparison.

Regarding to claim 4, Eto et al disclose the comparing circuit includes a decision transistor (56) having a control terminal coupled to the output voltage detector.

Regarding to claims 7, 8, 13, 15, Eto et al disclose the high side switching circuit includes an output transistor (24a), a pre-driver (51 and 53) a comparing circuit (52 and 53) comparing the output voltage ( $V_{pr}$ ) detected by the voltage detector (voltage divider 6a-8a) with the off-decision voltage ( $V_{ref2}$ ), a logic circuit (50a) controlling an operation of the pre-driver on a result of comparison.

Regarding to claims 9, 13, Eto et al disclose the comparing circuit includes a decision transistor (52) having a control terminal coupled to the output voltage detector.

Regarding to claims 20, 21, 22, Eto et al discloses the low side and high side are MOSFET transistor, but do not disclose the transistors are bipolar. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have

modified the low side and high side transistors of Eto et al with bipolar transistors as taught APA in order to improve the speeding of the transistors.

### ***Response to Arguments***

2. Applicant's arguments filed 02/26/2004 have been fully considered but they are not persuasive.

In response to applicant's arguments with respect to claims 1, 6, and 11 that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., a power consumption reduction aspect of the detecting circuit) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Thus, claims 1-26 do not distinguish over the combination of Eto and APA.

### ***Conclusion***

3. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

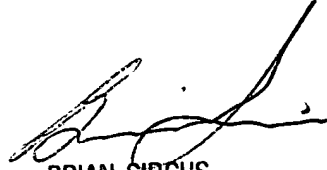
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Danny Nguyen whose telephone number is (571)-272-2054. The examiner can normally be reached on Mon to Fri 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Sircus can be reached on (571)-272-2058. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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3/24/2004

  
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